CURRICULUM VITAE

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PROFESSIONAL PREPARATION & POSITIONS:

University of Hawaii Manoa (UHM)	2021-present Professor
University of Hawaii Manoa (UHM)	2018-2021 Associate Chair
University of Hawaii Manoa (UHM)	2016-2021 Associate Professor
University of Hawaii Manoa (UHM)	2014-2016 Assistant Professor
University of Texas El Paso (UTEP)	2013-2014 Associate Professor
University of Texas El Paso (UTEP)	2008-2013 Assistant Professor
San Diego State University (SDSU)	2007-2008, Research Scientist I
IGPP-Scripps Inst. Oceanography-UCSD	2000-2007, Ph.D (TA and RA)
Vrije Universiteit Amsterdam	2000, Doctoraal Examen (= M.Sc. & B.Sc.)

Dissertation: The origin and geologic evolution of seamounts in the Pacific Ocean
Graduate Advisor: Hubert Staudigel, IGPP-Scripps Inst. Oceanography-UCSD
Postdoc Advisor: Aaron Pietruszka, San Diego State University

SUMMARY

I) TEACHING

- Redesigned or updated 4 courses at **UHM**: *Geology of the Hawaiian Islands (GG103/ERTH103; S20, S18-15), Natural Disasters and Human History (GG135; S19; S21), Geochemistry (GG325/ERTH325; F20-14), Trace elements and Isotopes (GG711; S14);* 5 courses on alternating semester cycle at prior university (UTEP).
- Incorporated research techniques, data collection and data processing, visual aids and visualizations in course work, interactive teaching techniques (clickers), new field trips, constructed course-specific websites for materials.
- Mentored students: *3 Phd (2* ***UHM****), 7 MSc (2* ***UHM****), and 6 BSc* (4 now graduate students), and 3 REU summer program students.

II) RESEARCH

- 33 peer-reviewed publications (19 at **UHM**), 60 abstracts (26 at **UHM**).
  - Nature; Nature Comm., Proc. Nat. Acad. Sci.; Earth Planet. Sci. Lett.; Geology; G-cubed; Chem. Geol., Rapid Common. Mass Spectrom., Applied Spectroscop., Oceanography, Anthropocene.
- 1214 times cited (71/yr), h-index: 18 (Google Scholar).
- 11 federally funded grants (~ $4.6M total projects):
  - NSF-OCE on seamounts from the Hawaiian Ridge to the Mid-Pacific Mountains

- NSF-MRI for thermal ionization mass spectrometer (TIMS), PI (with Pietruszka, Rubin)
- NSF-OCE on West Pacific seamounts, PI (collab. lead; with Koppers, Jackson).
- NSF-OCE on seamounts near NW Hawaiian Islands, PI (with Balbas [lead], Wanless).
- NSF-GP-IMPACT highschool summer and in-school visit program, co-PI with Smith-Konter, Dulai, Rowland
- NOAA-UCAR contract on Wake Island, sole PI
- NSF-OCE on Lau Basin, co-PI with Rubin, Hellebrand.
- NSF-OCE on Rurutu hotspot, PI (collab. lead, UTEP and UHM; with Koppers, Jackson).
- NSF-EAGER on Samoa hotspot, sole PI (UTEP).
- NSF-MRI for Visualization system, co-PI (UTEP; with Romero, Hurtado, Smith-Konter, Gonzalez).
- NSF-MRI for MC-ICP-MS, co-PI (UTEP; with Borrok, Ellis, Anthony, Pavlis).

- 2 UTEP/UT funded grants (as sole PI, totaling ~ $10,000).
- 9 invited professional talks, 1 invited summer workshop lectureship.

III) SERVICE

SCIENTIFIC COMMUNITY

- NSF panelist (OCE-MGG, FESD) and reviewer (OCE-MGG, EAR-PG, EAR-MRI, EAR-IF, FESD); NOAA Funding Opportunity 2020 reviewer. Reviewer for *Earth Planet. Sci. Lett., Geochim. Cosmochim. Acta, J. Petrol., Nature Geosci*., *Nature Comm., Nature Sci. Rep., Science Adv., Chem. Geol., J. Volc. Geoth. Res.,* and *G-cubed* (68 **reviews**).
- Tenure and promotion external review for mainland university
- Reviewer for German scientific funding agency (DFG - Deutschen Forschungsgemeinschaft)
- Co-editor for AGU special monograph on Earth's interior (with Marquardt [Oxford], Cottaar [Cambridge], Ballmer [U. College London])
- Goldschmidt 2020, field trip coordinator.
- GSA Cordilleran Section 2017, led Southeast Oahu field trip, co-organized session.
- As science co-lead on Okeanos Explorer (Wake Atoll, 2016) functioned as narrator and ROV-contact with the outside world through live-streamed broadcast.
- AGU 2014 Editor's citation for Excellence in Refereeing (service to *G-cubed*).
- AGU special session organizer (2009, 2013, 2014, 2016).
- Goldschmidt theme co-chair (2011; Mantle to Crust: Ocean Ridge and Intraplate Volcanism).
- Member of 3 professional societies.

HAWAI'I COMMUNITY

- Served as associate chair for Earth Sciences, served on 2 committees (1 as chair), multiple faculty search committees, 4 UTEP department/college committees and Faculty Senate.
- As part of GP-IMPACT grant for Hawaiian high school students: co-taught volcanology modules, lead East Oahu field trip.
- Participated in **UHM**, UTEP community outreach activities (open house presentations, demonstrations), at UTEP taught "volcanoes" module for summer outreach program.
- Served on 4 **UHM** PhD, 3 MSc committees, served on 22 UTEP MSc and PhD committees.

PRINCIPAL RESEARCH INTERESTS

- **Hotspot volcanism, mantle sources, and plate motion**
  - Using radiogenic isotope compositions (Sr-Nd-Pb-Hf) in hotspot chains to track the interaction of mantle sources with (absolute) plate motion, in comparison to the "standard" model derived from Hawaii; studies of the Gilbert Ridge and Tokelau seamounts, the Western Pacific seamounts, the Fieberling-Guadelupe seamounts, the Line Islands, the Samoan Islands, the Tuvalu Islands – my previous and current work has identified the longest-lived hotspot track in the Pacific (Rurutu hotspot), and my most recent work has traced this track in detail, and we are finding a hotspot bend like the Hawaii-Emperor Bend and indications of mantle plume motion
  - The origin of the temporal evolution of hotspot volcanoes; studies on Jasper Seamount (Fieberling-Guadalupe chain), and Savaii Island (Samoa) – this work has shown that volcanic evolution of hotspots exists to the scale of small seamounts, and that tectonic setting may affect the evolution
  - Origin and distribution of geochemical source materials for hotspots in the mantle, from integrating geochemical and geophysical parameters – we found that out of the array of mantle compositions only one correlates with geophysical observations suggesting a specific location in the mantle for this composition
  - Length scales of mantle source materials (from mid-ocean ridge geochemistry) – with statistical tests we can show that the isotopic compositions along the East-Pacific Rise is cyclic on a hemispherically scale (work to be finished)
- **Interaction of magmatic systems with the lithosphere**
  - Interaction of mafic upper mantle melts with thin continental lithosphere in the Rio Grande Rift (Southern New Mexico) – lavas and xenoliths studied by one of my students provide one of few places where crustal contamination of rising magma can be assessed through unique mixing relationships of the lavas and related xenoliths (work used for recent proposal, and manuscript to be finished)
  - Interaction of the lithosphere under Samoa with the Tonga Trench terminus, and its relation to Samoa's rejuvenated volcanic stage – we have demonstrated that a model of lithospheric flexure can generate the amounts of rejuvenated (late stage) lavas in Samoa, while also explaining the lavas' isotopic composition
- **Non-traditional isotope systems and technique development**
  - Development of a double spike (^{58}Fe-^{57}Fe) Fe isotope technique for high precision measurements of stable isotope ratios, with in-run interference correction for Ni, Cr to accomplish ~0.04‰ external precision on single runs. This technique has enabled us to investigate (Rayleigh) fractionation processes at work in Samoa's magmatic system – we revealed the importance of Ni corrections by special monitoring by ion counter is important for Fe isotope analysis by double spike (in revision), and we have found extremely fractionated Fe isotope values for Samoa, that are attributable to source oxygen fugacity and lithology (pending submission)
  - Sr isotope measurement technique on an MC-ICP-MS, including in-run Kr and Rb corrections to improve precision from on-peak zeros technique – we developed a more precise way to measure Sr isotopes by MC-ICP-MS than is commonly used for this instrument, with results rivaling TIMS measurements I many cases.
  - Measurement techniques for Nd, Hf, Pb, Ra on MC-ICP-MS – I have spent many hours optimizing measurement routines for these isotope systems.

- Experiments with specialized Eichrom resins to improve elemental separation efficiency – these efforts simplify the chemistry and arise from the need to make measurements of multiple isotope systems available to students with other research specializations
- High-precision Ca content in olivine measurements with ICP-OES, to improve pressure estimates for mantle xenoliths – we developed a simple method to define the Ca content of olivines that improves precision by an order of magnitude compared to an electron microprobe

- **Laser Induced Breakdown Spectroscopy**
  - Application of Laser Induced Breakdown Spectroscopy (LIBS) to geologic samples for first-order shipboard sample classification and sample selection for further analysis – on the latest cruise we were able to characterize nearly 600 dredge samples as a result of these efforts, while standard operating procedures would only select a small subset for any analysis (data and technique evaluation in process for publication)
- **Monitoring of active volcanoes**
  - Defining the activity level and/or processes and internal structure of volcanic systems – this work identified the location of volcanic activity expressed as seismic events in Samoa's youngest volcano, Vailulu'u. Infrequent bathymetric surveys (5 from 1999-2017) are currently the only gauge on activity.

AWARDS/FUNDING (NSF AND OTHER)

- NSF-OCE (2021-2024), Collaborative Research: Investigating Mantle Source Reservoirs and Cretaceous Plate Motions Recorded by Ancient Mid-Pacific Oceanic Rises and Seamount Tracks, $1,140,797 total project, (PI, UHM $40,973; collaborators: Konrad [UNLV, lead institution], Balbas [CSLB], Finlayson [UMD]).
- NSF-MRI (2020-2022), MRI: Acquisition of a Thermal Ionization Mass Spectrometer (TIMS) for Multi-disciplinary Research and Student Training at UH, $624,649 NSF/ $267,707 UH match (PI, Collaborators: Pietruszka, Rubin).
- NSF-OCE (start date depends on Kilo Moana schedule, 3 years), Collaborative Research: Do improved absolute plate motion models based on Cretaceous Western Pacific seamounts relate Louisville to Ontong-Java?, $998,217 total project, (PI and lead institution UHM $309,050; collaborators: Wessel [UHM], Jackson [UCSB], Koppers [OSU]).
- NSF-OCE (2020-2022), Collaborative Research: Testing for large scale Hawaiian arch volcanism and associated magma sources, $195,019 total project, (PI, UHM $37,996; collaborators: Balbas [OSU, lead institution], Wanless [BSU])
- NSF-GP-IMPACT (2019-2022), Project EPIK – Earth, Planets, Ike and Kuleana – Preparing the next generation of diverse geoscientists in Hawaii, $319,679 (co-PI with Smith-Konter, Dulai, Rowland).
- NOAA/UCAR (2016-2017), Wake Island cruise on NOAA's Okeanos Explorer, $26,189.
- NSF-OCE (2015-2017), Temporal/spatial scales of mantle wedge composition and processes investigated with young boninites and basalts from the unusually active NE Lau Basin, $275,379. (co-PI with Rubin, Hellebrand)
- NSF-OCE (2012-2016), Collaborative Research: Using the Rurutu hotspot to evaluate mantle motion and absolute plate motion model, $698,809 total project, (PI and lead institution UHM $240,800; collaborators: Jackson [UCSB], Koppers [OSU])

- University Research Institution, UTEP (2011), Using lava radiogenic isotope compositions to investigate the controversial origin of substantial volcanism in the mid-Pacific Ocean; the Line Islands, $5000. (sole PI)
- NSF-EAGER (2009-2011), Cause and duration of extensive rejuvenated volcanism on Savai'i, Samoa, $18,389. (PI, support from Jackson [BU], Koppers [OSU]).
- NSF-MRI (2009-2012), Acquisition of the Cyber-ShARE Collaborative Visualization System, $699,671. (co-PI, with Romero, Hurtado, Smith-Konter, Gonzalez).
- NSF-MRI (2008-2009), Acquisition of a LA-MC-ICP-MS for Innovative, Interdisciplinary Research at UTEP: Student Training, Faculty Development, Institutional Excellence, $524,720. (co-PI, with Borrok, Ellis, Anthony, Pavlis).
- University Research Institution, UTEP (2008), High-precision isotopic measurements of iron by spiked plasma ionization mass spectrometry, $4895. (sole PI)
- University of California Ship Funds (2005): 5 day cruise to dredge Jasper Seamount (Chief Scientist).
- Whole Earth Society Award, SIO (2003): funds to learn Hf isotope method from J. Blichert-Toft, who developed one of the most commonly employed methods.

PUBLICATIONS (* = STUDENT)

UHM affiliated:

34. Buff, L., Jackson, M.G., Konrad, K., **Konter**, J.G., 2021. "Missing links" for the long-lived Macdonald and Arago hotspots, South Pacific Ocean. *Geology*. doi:10.1130/G48276.1

33. Ashley, A.W., Bizimis, M., Peslier, A.H., Jackson, M.G., **Konter**, J.G., 2020. Metasomatism and Hydration of the Oceanic Lithosphere: A Case Study of Peridotite Xenoliths from Samoa. *J. Petrol.* doi:10.1093/petrology/egaa028

32. Jackson, M.G., Halldórsson, S.A., Price, A., Kurz, M.D., **Konter**, J.G., Koppers, A.A.P., Day, J.M.D., 2020. Contrasting old and young volcanism from Aitutaki, Cook Islands: Implications for the origins of the Cook-Austral volcanic chain. *J. Petrol.* doi:10.1093/petrology/egaa037/5781968

31. Reinhard, A.A., Jackson, M.G., Blusztajn, J., Koppers, A.A.P., Simms, A.R., **Konter**, J.G., 2019, "Petit spot" rejuvenated volcanism superimposed on plume−derived Samoan shield volcanoes: Evidence from a 645−m drill core from Tutuila Island, American Samoa. *Geochem. Geophys. Geosyst.*, 20. doi:10.1029/2018GC007985.

30. **Konter**, J.G., Finlayson, V.A., Engel., J., Jackson, M.G., Koppers, A.A.P., Sharma, S., 2019, Shipboard characterization of Tuvalu, Samoa, and Lau dredge samples by Laser-Induced Breakdown Spectroscopy (LIBS), *Applied Spectroscopy*, 73, 623–637. doi:10.1177/0003702819830793

29. Jackson, M.G., Becker, T.W., **Konter**, J.G., 2018, Geochemistry and distribution of recycled domains in the mantle inferred from Nd and Pb isotopes in oceanic hotspots: implications for

storage in the large low shear wave velocity provinces (LLSVPs), *Geochem. Geophys. Geosyst.*, doi: 10.1029/2018GC007552.

28. Finlayson*, V.A., **Konter**, J.G., Konrad, K., Koppers, A.A.P., Jackson, M.G., Rooney, T.O., 2018. Sr–Pb–Nd–Hf isotopes and 40Ar/39Ar ages reveal a Hawaii–Emperor-style bend in the Rurutu hotspot. *Earth Planet. Sci. Lett*. 500, 168–179. doi:10.1016/j.epsl.2018.08.020

27. Reinhard, A.A., Jackson, M.G., Koornneef, J.M., Rose-Koga, E.F., Blusztajn, J., **Konter**, J.G., Koga, K.T., Wallace, P.J., Harvey, J., 2018. Sr and Nd isotopic compositions of individual olivine-hosted melt inclusions from Hawai'i and Samoa_ Implications for the origin of isotopic heterogeneity in melt inclusions from OIB lavas. *Chem. Geol*. 495, 36–49. doi:10.1016/j.chemgeo.2018.07.034

26. Reyes, F.R., Engle, M.A., Jin, L., Jacobs, M.A., **Konter**, J.G., 2018. Hydrogeochemical controls on brackish groundwater and its suitability for use in hydraulic fracturing: The Dockum Aquifer, Midland Basin, Texas. *Environ. Geosci*. 25, 37–63. doi:10.1306/eg.01241817017

25. Konrad, K., Koppers, A.A.P., Steinberger, B., Finlayson, V.A., **Konter**, J.G., Jackson, M.G., 2018. On the relative motions of long-lived Pacific mantle plumes. *Nature Communications* 1–8. doi:10.1038/s41467-018-03277-x

24. Jackson, M.G., Becker, T.W., **Konter**, J.G., 2018. Evidence for a deep mantle source for EM and HIMU domains from integrated geochemical and geophysical constraints. *Earth Planet. Sci. Lett. 484*, 154–167. doi:10.1016/j.epsl.2017.11.052

23. Herrera, S., Jackson, M.G., **Konter**, J.G., Lobecker, E., Elliott, K., 2018. New Frontiers in Ocean Exploration: The E/V Nautilus, NOAA Ship Okeanos Explorer, and R/V Falkor 2017 Field Season. *Oceanography*. doi:10.5670/oceanog.2018.supplement.01

22. Jackson, M.G., **Konter,** J.G., Becker, T.W., 2017. Primordial helium entrained by the hottest mantle plumes. *Nature 542*, 340–343. doi:10.1038/nature21023

21. Kelley, C., **Konter,** J.G., Kennedy, B.R.C., 2017. New Frontiers in Ocean Exploration: The E/V Nautilus, NOAA Ship Okeanos Explorer, and R/V Falkor 2016 Field Season. Bell, K., Flanders, J., Bowman, A., Raineault, N., editors. *Oceanography*. doi:10.5670/oceanog.2017.supplement.01

20. **Konter**, J.G., Pietruszka, A.J., Hanan, B.B., Finlayson, V.A., Craddock, P.R., Jackson, M.G., Dauphas, N., 2016. Unusual δ56Fe values in Samoan rejuvenated lavas generated in the mantle. Earth Planet. Sci. Lett. 450, 221–232. doi:10.1016/j.epsl.2016.06.029

19. Price, A.A., Jackson, M.G., Blichert-Toft, J., Blusztajn, J., Conatser, C.S., **Konter**, J.G., Koppers, A.A.P., Kurz, M.D., 2016. Geochemical evidence in the northeast Lau Basin for subduction of the Cook-Austral volcanic chain in the Tonga Trench. Geochem. Geophys. Geosyst 17, 1694–1724. doi:10.1002/2015GC006237

18. Hu, Y., Harrington, M.D., Sun, Y., Yang, Z., **Konter,** J., Teng, F.-Z., 2016. Magnesium isotopic homogeneity of San Carlos olivine: a potential standard for Mg isotopic analysis by multi-collector inductively coupled plasma mass spectrometry. Rapid Commun. Mass Spectrom. 30, 2123–2132. doi:10.1002/rcm.7700

17. Finlayson*, V.A., **Konter**, J.G., Ma, L., 2015. The importance of a Ni correction with ion counter in the double spike analysis of Fe isotope compositions using a 57Fe/ 58Fe double spike. Geochem. Geophys. Geosyst. doi:10.1002/2015GC006012

16. Jackson, M.G., Koga, K.T., Price, A., **Konter,** J.G., Koppers, A.A.P., Finlayson, V.A., Konrad, K., Hauri, E.H., Kylander-Clark, A., Kelley, K.A., Kendrick, M.A., *in press*, Deeply-dredged Submarine HIMU Glasses from the Tuvalu Islands, Polynesia: Implications for Volatile Budgets of Recycled Oceanic Crust, *Geochem. Geophys. Geosyst*.

15. Jackson, M.G., Hart, S.R., **Konter**, J.G., Kurz, M.D., Blusztajn, J., Farley, K.A., (2014). Helium and lead isotopes reveal the geochemical geometry of the Samoan plume. *Nature, 514, 355-358*. doi:10.1038/nature13794

14. **Konter**, J. G., Storm*, L.P., (2014), High precision $^{87}Sr/^{86}Sr$ measurements by MC-ICP-MS, simultaneously solving for Kr interferences and mass-based fractionation. *Chemical Geology, 385, 26-34*. doi:10.1016/j.chemgeo.2014.07.009

Prior to UHM:

13. Ma, L., **Konter,** J., Herndon, E., Jin, L., Steinhoefel, G., Sanchez, D., Brantley, S., (2014). Quantifying an early signature of the industrial revolution from lead concentrations and isotopes in SOILS of Pennsylvania, USA. Anthropocene, in press, doi:10.1016/j.ancene.2014.12.003

12. **Konter**, J. G., Jackson, M., (2012), Large volumes of rejuvenated volcanism in Samoa: Evidence supporting a tectonic influence on late-stage volcanism. *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2011GC003974.

11. **Konter**, J. G., Becker, T., (2012), Shallow lithospheric contribution to mantle plumes revealed by integrating seismic and geochemical data. *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2011GC003923.

10. Koppers, A. A., Russell, J. A., Roberts, J., Jackson, M. G**., Konter**, J. G., Wright, D. J., Staudigel, H., Hart, S. R., (2011). Age Systematics of Two Young En Echelon Samoan Volcanic Trails. *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2010GC003438.

9. Jackson, M.G., Hart, S.R., **Konter,** J.G., Koppers, A.A.P., Staudigel, H., Kurz, M.D., Blusztajn, J., Sinton, J.M., (2010), The Samoan hotspot track on a "hotspot highway": Implications for mantle plumes and a deep Samoan mantle source, *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2010GC003232.

8. **Konter**, J.G., Staudigel, H., Gee, J.S., (2010), Spotlight: Jasper Seamount. *Oceanography*, 23(1), 40-41.

7. Koppers, A.A., Staudigel, H., Hart, S.R., Young, C., **Konter**, J.G., (2010), Spotlight: Vailulu'u Seamount. *Oceanography, 23*(1), 164-165.

6. **Konter**, J.G.; Staudigel, H., Blichert-Toft, J., Hanan, B.B., Polvé, M., Davies, G., Shimizu, N., Schiffman, P., (2009), Geochemical stages at Jasper Seamount and the origin of intraplate volcanoes, *Geochemistry, Geophysics, Geosystems*, Q02001, doi:10.1029/2008GC002236.

5. **Konter**, J.G.; Hanan, B.B., Blichert-Toft, J., Koppers, A.A.P., Plank, T., Staudigel, H., (2008), One hundred million years of mantle geochemical history suggest the retiring of mantle plumes is premature, *Earth and Planetary Science Letters, 275*, 285-295.

4. Koppers, A.A.P.; Russell, J.A.; Jackson, M.G.; **Konter,** J.; Staudigel, H.; Hart, S.R. (2008), Samoa reinstated as a primary hotspot trail, *Geology*, 36, 435-438.

3. Jackson, M.G.; Hart, S.R.; Koppers, A.A.P.; Blusztajn, J.; Staudigel, H.; **Konter**, J.; Kurz, M.; Russell, J.A. (2007), Evidence for the return of subducted continental crust in Samoan lavas, *Nature, 448*, 684-687.

2. Staudigel, H.; Hart, S.R.; Pile, A.; Bailey, B.E.; Baker, E.T.; Brooke, S.; Connelly, D.P.; Haucke, L.; German, C.R.; Hudson, I.; Jones, D.; Koppers, A.A.P.; **Konter**, J.; Lee, R.; Pietsch, T.W.; Tebo, B.M.; Templeton, A.S.; Zierenberg, R.; Young, C.M., (2006), Vailulu'u Seamount, Samoa: Life and death on an active submarine volcano, *Proc. Nat. Acad. Sci.*, 103: 6448-6453.

1. **Konter**, J.G.; Staudigel, H.; Hart, S.R.; Shearer, P.M., Seafloor seismic monitoring of an active submarine volcano; local seismicity at Vailulu'u Seamount, Samoa, *Geochemistry, Geophysics, Geosystems*, vol.5, no.6, 15 pp., 26 Jun 2004.

ABSTRACTS

60 abstracts mostly for AGU and Goldschmidt

GRADUATE STUDENTS

Advising (current occupation): Crocker (fossil fuel industry), Clarke (independent consultant), Patlan (UTEP, USGS), Storm (fossil fuel industry), Anaya (Dept. Homeland Security), Benevides (fossil fuel industry), Finlayson (postdoc, U. Maryland), Beucler (completed spring 2020), Gauer Pasqualon (ongoing).
Committee member: served on additional 19 MSc and PhD committees for other students than those listed above. **2014-2018 at UHM:** served on Finlayson's committee as advisor/chair (completed), Lin's committee as member (completed), Beucler's committee as advisor (completed), Keng-Hsien Chao as committee member (ongoing), Miles Egan as committee member (completed), Elizabeth Benyshek for comprehensive exam, Brandon MacGregor for

comprehensive exam, Andrew Chase as committee member (completed), Natália Gauer Pasqualon as advisor/chair (ongoing).

UNDERGRADUATE STUDENTS

Research project participants (subsequent graduate program): Waters (UHM), Zamora (U. Arizona), Anaya (UTEP/now Dept. Homeland Security), Monreal (UTEP), Engel (UTEP), Benitez (n/a). Engel and Benitez joined the 2013 R/V Revelle cruise. Six additional undergraduate students joined the same cruise as volunteer, of which five are in graduate school, and one is a high school teacher now. *3 REU summer program students;* Holly Pettus (W. Virginia; 2017), Alex Alverson (Brown U.; 2018), Molly Cunningham (Renselaer Polytechnic; 2019).

PRINCIPAL COLLABORATORS AND CO-AUTHORS (ALPHABETICALLY)

Andrea Balbas (Oregon State University), Thorsten Becker (University of Southern California/University of Texas), Michael Bizimis (University of South Carolina), Janne Blichert-Toft (Ecole Normale Supérieure de Lyon), Mark Engle (USGS/University of Texas El Paso), Jeffrey Gee (Scripps Inst. Oceanography-UCSD), Barry Hanan (San Diego State University), Stanley Hart (Woods Hole Oceanographic Institution), Eric Hellebrand (UHM), Matthew Jackson (University of California Santa Barbara), Anthony Koppers (Oregon State University), Lin Ma (University of Texas at El Paso), Terry Plank (Boston University), Tyrone Rooney (Michigan State University), Ken Rubin (UHM), Shiv Sharma (UHM), Hubert Staudigel (Scripps Inst. Oceanography-UCSD), Dorsey Wanless (Boise State University), Paul Wessel (UHM).

PROFESSIONAL EXPERIENCE AND ACTIVITIES

Laboratory Setup and Repair/Maintenance

I have spent significant time on technique setup and maintenance/repair in two facilities:

Clean Room: At UTEP, set up and maintenance of clean room techniques (development, calibration), and all supporting equipments (e.g. stills, drying boxes, oversight of clean room remodel). At UHM, set up techniques new to the lab, and supporting equipment.

Mass Spectrometers: At UTEP, primary on maintenance and repairs of Nu MC-ICP-MS, new measurement technique development. At UHM, troubleshooting and repair of mainly Nu MC-ICP-MS, some on VG Sector TIMS. Additionally, development of new measurement techniques on Nu MC-ICP-MS.

Operation (± maintenance) of instrumentation

- Multi-Collector ICP-MS: Nu Plasma High Resolution (San Diego State University, University of Texas at El Paso, University of Hawaii at Manoa), Nu Plasma 1700 (San Diego State University), VG Plasma 54 (Ecole Normale Superieure de Lyon).
- Multi-Collector TIMS: Micromass Sector 54 (San Diego State University), VG Sector (University of Hawaii Manoa).

- Laser Induced Breakdown Spectroscopy: Stellarnet PortaLIBS; personally modified sample chamber with sample stage and rewrote collection and processing software, also interfaced with separate Catalina Scientific EMU spectrometer.
- Laser Ablation ICP-MS: VG PQ Excell with 213nm Merchantek Nd:YAG laser at Boston University
- Secondary Ionization Mass Spectrometer (SIMS): Cameca 3F at Woods Hole Oceanographic Institution
- Electron Microprobe: JEOL JXA8800M at Vrije Universiteit Amsterdam

Clean room set-up and maintenance

- Developed a class 1000 clean room, with fully exhausting class 100 laminar flow benches, and HEPA-filtered drying tunnels for geologic sample preparation at UTEP
- Set up of sub-boiling stills (quartz and Teflon) for high purity reagents
- Water filtration (18 MOhm) set-up and maintenance
- Design and building of PID heat controllers (for stills, hotplates)
- Separation column design and production from PTFE shrink tubing
- Technique development and calibration of AG resin, and Eichrom Sr, Ln, TRU, DGA resin columns using MC-ICP-MS

Analytical techniques

- Chemical separation and development of Fe double-spike technique
- (Double) spike calibration
- Chemical separation for Nd, Sr, Pb, Hf isotope geochemistry
- Basic sample preparation including preparing powders, mineral separation with e.g. Frantz magnet, and "heavy" liquids
- Sample preparation for XRF
- Flux free synthetic glass production using resistive heating
- Filament loading for TIMS

GIS/Visualization related experience

- Extensive use of open source packages GMT and GRASS GIS, experience with Fledermaus.

FIELD EXPERIENCE

Ocean based (approx. 5 months combined, 5 weeks as chief scientist)

- Summer 2019: chief scientist dredging deep submarine ridge west of Kahoʻolawe (R/V Kilo Moana).
- Summer 2018: remote participant in Ocean Exploration Trust's mapping and ROV cruise to seamounts in the Papahānaumokuākea Marine National Monument, north of Gardner and French Frigate Shoals.
- Spring 2017: remote participant in NOAA's mapping and ROV cruises around American Samoa.
- Science Co-Lead on NOAA's ROV-diving Wake Island (R/V Okeanos Explorer, 2016, W Pacific)
- Summer 2015: remote participant in NOAA's Hohonu Moana mapping and ROV program, specifically for the national marine monument around Johnston Atoll.
- Chief scientist Dredging the Rurutu Hotspot (R/V Revelle 2013, C Pacific).
- Alia expedition participant (R/V Kilo Moana 2005, around Samoa)

- Chief scientist Dredging Jasper Seamount expedition (R/V New Horizon 2002)
- Avon 2 and 3 expeditions participant (R/V Melville 1999, W Pacific)

Land based (approx. 9 months combined)

- Savai'i, Samoa (2009)
- New Mexico volcanic and metamorphic areas (2008-2013)
- Royal Society Range/Mt. Erebus/Taylor Valley (Antarctica, 2004)
- Hawaii (Big Island, 2003)
- La Palma (Canary Islands, 1999)
- Cyprus (1999)
- Alps (Switzerland & Italy, 1998)
- SE Sweden (1998)
- Scotland (1998)
- Central and SE Spain (1996, 1997)
- Pyrenees (France, 1997)
- Sauerland, Eifel, Mosel (Germany, 1995, 1997)
- Ardennes (Belgium, 1996)
- SE Netherlands (1995)

INVITED TALKS/LECTURES

- Invited lecturer in the 2016 summer program of the Cooperative Institute for Dynamic Earth Research (CIDER); for advanced PhD students, post-docs, other researchers
- I declined (due to UHM move): Cal State Fullerton and Cal Poly Pomona (2013).
- American Geophysical Union (2011)
- University of Texas at Austin (2011)
- Texas A&M University (2011)
- New Mexico State University (2010)
- Michigan State University (2010)
- University of Texas at Dallas (2009)
- El Paso Community College (2008)
- Colorado School of Mines (2007)

SCIENTIFIC WORKSHOP ATTENDANCE

- Cooperative Studies of Earth's Deep Interior (CSEDI) Science Plan Workshop (2015), San Diego. Workshop served to inform NSF's CSEDI program.
- Ocean Exploration Trust (Dec 2014, white paper submitted, pre-AGU meeting). Workshop also served to inform NOAA's site selection for their ship, Okeanos Explorer
- Lithosphere-Asthenosphere Boundary (2011), Portland, USA
- Cooperative Institute for Deep Earth Research Community (2009), Point Reyes, USA
- Seamount (2009), San Diego, USA
- Cooperative Institute for Deep Earth Research (2004), Santa Barbara, USA
- Geochemical Earth Reference Model (2003), Lyon, France
- Geochemical Earth Reference Model (2001), San Diego, USA
- Fluid Inclusions (1998), Siena, Italy